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Developing a Model to Study the Influence of Resource Based and Social Capital Theory on Performance of Sugar Cooperative Factory: A Case Study Approach

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Abstract

Sugar Cooperative Factory constitutes of Industrial Relations and performance of industrial activities. The factory has led an example for all cooperatives to start a sustainable approach. The sugar factory uses the 3R of reuse, recycle and repair to sustain the sugar world. The aim of the research is to study the effect of tangible and intangible resources on the performance of the sugar factory. The study also enlightens the effect of social capital theory on performance of the sugar cooperative. The study aims to recommend suggestions for the better performance of the sugar cooperative factory. The study is based on both primary and secondary data. Primary data has been collected from the manager, officers, staffs and workers of one of the sugar factory in Satara district of Maharashtra. Kisanveer Sugar Factory was chosen for the study. 15 interviews were conducted with the stakeholders which included workers, board of directors, manager, chairman and office staff. A structured questionnaire was prepared to study the industry details. The study comes out with the importance of human resource and leadership approach for sustainable cooperative performance. The study also suggests few policy recommendations and suggestions for a better performance of sugar cooperative. The present study is an approach to develop a sustainable sugar world with better human resource management.

Keywords: Human Resource, Intangible Resources, Performance, Social Capital, Tangible Resources

1. Introduction

Human Resource Management is one of the most happening functions because managing human resource is the prime factor for any organization. Human resource is generally defined as knowledge, skills and competency. Human resources have the capability to convert an adverse situation into an opportunity. This is an art of the human resource that tries to adapt to the environment and goes through the change management. For any business or organization to sustain, it requires three major adoptions namely initiatives, processes and culture. Human Resource Management is a core concept and sustainability can be achieved through Human Resource Management. In the present era we talk about sustainability, green marketing, waste management and development but the prime factor

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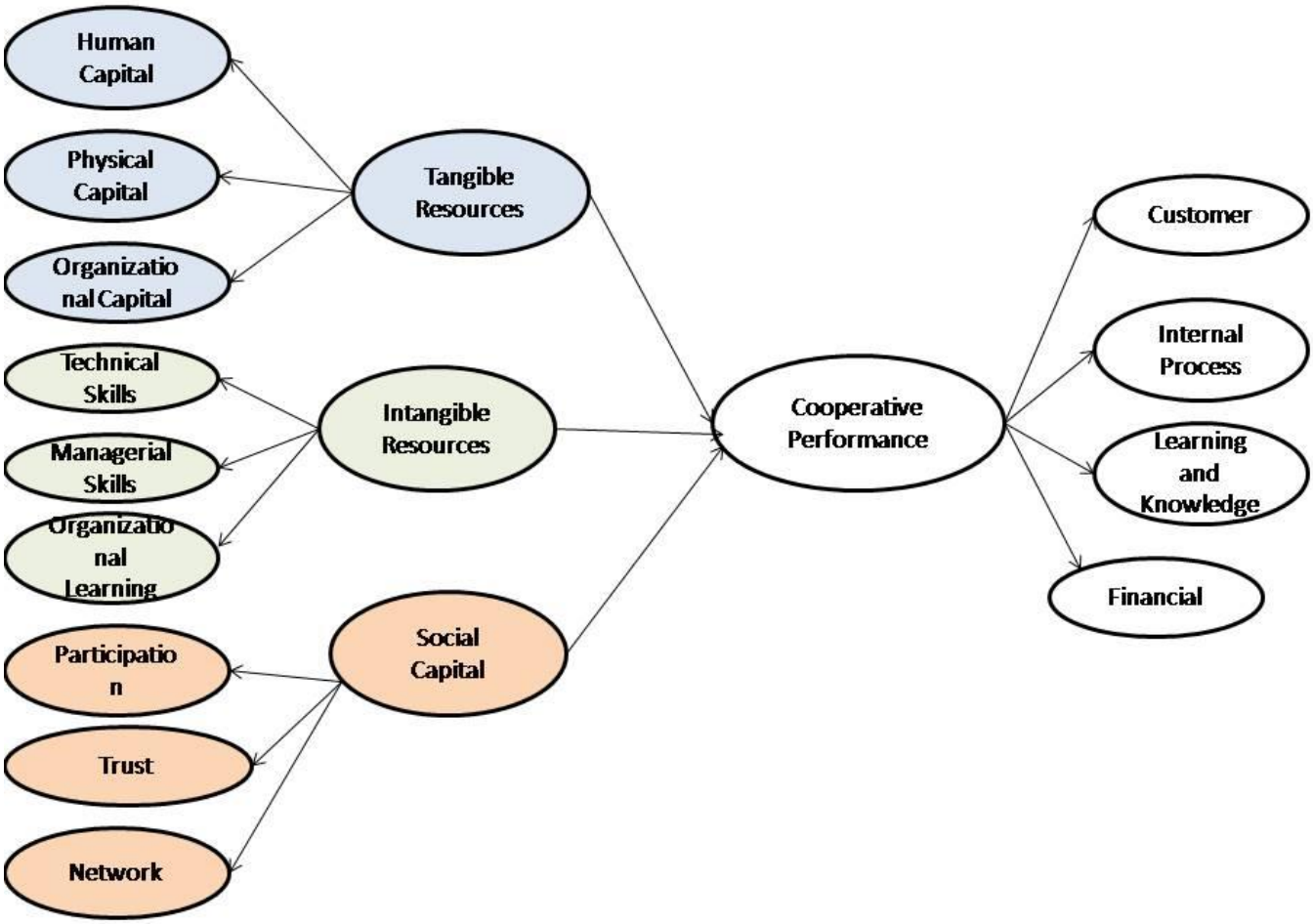

Figure 1. Modeling cooperative performance using resource based and social capital theory.

which drives these elements is Human Resource. With this we come to our research question that what is the role of resources and social capital in performance of sugar cooperatives.

The main aim of the study is to explore the literature on human resource management and to integrate it with the concept of sustainability. The aim of the study is

- To study the effect of tangible, intangible resources and social capital on the performance of the sugar factory.
- To recommend suggestions for better performance of the sugar cooperative factory.

To proceed with this objective, we have undergone extensive literature review and exploratory study on a sugar factory named "Kisanveer Sahkari Sakhar Karkhana[1]" at Bhuinj, Satara. The study proceeds with four sections. The second section of Literature Review explores researches followed by Research Methodology, Result and Discussion and finally Conclusion.

[1] **Kisanveer Satara Sahakari Sakhar Karkhana Ltd.**, Bhuinj, was registered under the provision of The Maharashtra Co-operative societies Act.1960, KVSSKL was established in the year 1968, tough effort of late **Freedom Fighter Abasaheb Veer & Shri. Prataprao Bhosale** who is very prominent leader at Wai Tahasil, he has contributed greatly to the Co-operative movement in Maharashtra in general & Co-operative sugar mill in particular. Both the above are chief promoters & great leaders for our factory. This factory owes its existence to the Revolutionary Agitation of farmers of Wai, under the visionary leadership, Agriculturist, the ruling Chairman Honorable Shri. Madandada Bhosale, who is a very prominent leader and he has contributed greatly to the development of co-operative movement in the State in general from inception of KVSSKL.

2. Literature Review

Human Resource Management constitutes of people related functions like hiring, selection, compensation, human welfare, and training and performance appraisal. The concepts like leadership development, motivation, training, change management, diversity, workforce engagement, health and safety have supported to enhance the human capital to a great extent. Human capital is all about knowledge, skills and capabilities. Human Resource Management talks about Recruitment, Selection, Performance Management, Job Analysis, Industrial Relations and Training and Development (Mazur, 2015). The objective of sustainability may be different for different human resources. However, the concern for sustainability depends upon the desire of human resources to achieve (Spooner and Kaine, 2010). Thus, people concerns in the work context have both direct and indirect implications. Human Resource Management has a significant contribution on Sustainability (Wirtenberg et al., 2007; Harmon et al., 2010). Human resource is being picturized as development of competencies and organizational capabilities.

There has been scarcity of research linking performance and human resource management (Cohen et al., 2012; Ehnert and Harry, 2012). The seeds of performance are sown in human resource management. Human Resource Management directs the employees' mindset to understand sustainability and also leads to cause long term social, economic and environment objectives (Stankeviciute and Savaneviciene, 2013). The (Figure 1) depicts the model integrating resource based and social capital for the performance of sugar cooperative.

Table 1. Construct and derivation Types Measures

Construct	Items	Type	References
Resource Based theory			
Tangible Resource			
Physical Capital	Adequacy of Infrastructure Byplants Cogeneration Distillery plant Size of the sugar factory	Reflective	Barney, 1991, Grant, 1991; Barratt and Oke, 2007; Bharadwaj, 2000; Brandon-Jones et al., 2014; Gupta et al., 2018
Human Capital	Number of workers Permanent Temporary Contractual Adequacy of staff Adequacy of workers Timing and working hours of workers	Reflective	
Organization Capital	Organization structure of the Factory	Reflective	
Intangible Resources			
Technical Skills	Training Skills Education Experience	Reflective	
Managerial Skills	Understanding Coordination Planning	Reflective	
Organization Learning	Knowledge Application	Reflective	

(*Continued*)

Construct	Items	Type	References
Social Capital Theory			
Trust	Industrial relations Employer-Employer Employee- Employee Employer- Employee	Reflective	Nakagawa and Shaw, 2004; Chopra and Meindl, 2007; Olaogbebikan and Oloruntoba, 2017
Participation	Participation of all staff and workers	Reflective	
Network	network of association or relationship that binds people to form a network	Reflective	
Social Norm	Proper implementation of Industrial and Government policy Factory Act Compensation Act	Reflective	
Cooperative performance			
Internal Business Process	Byplant	Reflective	Kaplan and Norton, 2007
Finance	Annual Report Profit	Reflective	
Learning and Knowledge	strategies	Reflective	
Customer	Buyers Stakeholders	Reflective	

3. Resource Based Theory

A classical management theory of 90's which is still relevant in modern days, Resource based view theory is very popular among organizations to determine the strategic resources for delivering sustained competitive advantage. Jay B. Barney popularly known as father of modern RBV theory has discussed in detail in his 1991 seminal work "Firm resources and sustained competitive advantage". The RBV is a managerial framework which sees resources as key to superior firm performance. It helps the firms to look inside the company to find the strategic resources for competitive advantage.

For any organization to exploit external opportunities is much more feasible to do so by using existing resources. As per the name it is clear that RBV gives major role to resources for achieving the organizational performance growth.

Two broad classification of resources are-

- Tangible resources
- Intangible resources

Tangible resources-In simple language tangible resources are physical things that can be seen or touched. Physical capital resources, Human capital resources and Organizational capital resources are the three items for tangible resources.

Intangible resources-Intangible Resources constitutes of items like Brand reputation, Trademark, Intellectual right, managerial skills, technical skills, organizational learning etc.

For achieving superior competitive advantage as per RBV theory, it focuses the managerial attention on the firm's internal resources. To identify those assets, capabilities and competencies. RBV proposes two assumptions that resources must be heterogeneous and immobile.

Heterogeneous-As per RBV, assumption explains that firms are heterogeneous because The Factory possess heterogeneous resources, meaning firms have different bundle of resources and can have different strategies. This is because of the fact that one firm differs from other with respect to possession of skills, capabilities, and other resources. So, it is the tasks of manager to strategically mix the existing resources for achieving competitive advantage.

Immobile-As per RBV resources are not mobile and do not move from one firm to other, in short run. For example, brand equity, processes, intellectual property, knowledge etc. are the intangible resources.

Barney, in 1991 has proposed one VRIN criteria for resources to hold potential as sources of sustainable competitive advantage. VRIN stands for Valuable, Rare, Imperfectly Imitable and Not substitutable. If the resources of the organization pass through the criteria successfully, then the Factory is called as resources of SCA. Later on, Rothaermel in 2013 improved the VRIN framework to VRIO by adding the question "Is the company organized to explot these resources?"

Valuable-The resources which help the organization achieving effectiveness and efficiency through increasing the value offered to customers are called valuable resources.

Rare-The resources which are not available to other competitors are considered as rare resources.

Imitability-It implies that such resources are not easily implemented by the competitors which enable a firm to achieve sustained competitive advantage.

Organization-With the availability of valuable, rare and non imitable resources it does not imply that the firm will achieve sustained competitive advantage because the organization should be capable to exploit these resources to achieve it.

3.1 Social Capital Theory

The social capital theory constitutes the network of association or relationship that binds people or organization or country to form a network and provide assistance. It can be defined as a function of trust, social norms, coordination, commitment, participation and network, that affect the social and economic activities (Nakagawa and Shaw, 2004).

4. Performance of Sugar Cooperatives

Balanced scorecard (BSC) includes metrics for performance measurement (Kaplan and Norton, 2007). It is a linkage of a firm's vision and strategy with the metrics (financial, internal business process, customer, learning and knowledge).

5. Research Methodology

The research study is based on both primary and secondary data. Around 60 research papers have been explored to elaborate the topic Human Resource Management in Cooperatives. A structured questionnaire has been prepared for data collection from the managers, staffs and officers of sugar cooperative factory. The sustainable practices of the sugar factory have been explored. The resource based and social capital theory has been used to explain the role of cooperatives in performance of the sugar factory. Kisanveer Sugar Factory was chosen for the study. 15 interviews were conducted with the stakeholders which included workers, board of directors, chairman and office staff. A structured questionnaire was prepared to study the industry.

6. Results and Discussions

After the survey of sugar co-operative the below results are discussed

6.1 Tangible Resources

Sugar Factory is a goods producing organization and it has also possess various type of tangible resources for its successful operation. Tangible resources are classified into three categories (Barney et al, 1991) as follows:-

6.1.1 Physical Capital

Physical Capital constitutes the physical resources of an organization. In sugar factory the physical capital constitutes the infrastructure, plant and machineries, byplants, Cogeneration, distillery and the ancillary units of the sugar factory. Physical capital of the sugar factory constitutes the major capital of the organization. Advanced and technological upgraded physical capital gives better output/result. It leads to cost effective production and minimization of cost of production.

Kisanveer Sugar factory covers six tehsils of Satara district. It has a very huge area of sugarcane growers. It has adapted android based cane plantation system for effective and efficient data of the cane growers. The android based cane plantation system helps the factory know about the variety of cane planted by the farmers, maturity period, area of cane planted, types and quantity of fertilizer required, sms alert to the farmers regarding weather, time of harvesting etc. This system reduces the cost and manpower required for manual cane survey and it is totally digital and easy to update within very less time. It helps in month-wise planning and harvesting of sugarcane.

There were two Weighbridges available in the plant premises for weighment of cane loaded vehicle, one for incoming loaded vehicles and one for outgoing empty vehicles. Data relating vehicles were captured here in the computers and were allowed to enter into the unloading premises for unloading of cane. Two manual weighing scales were also there for weighment of cane loaded in bullock cart.

Four crushing mills are used for cane crushing for extraction of juice. Capacities of crushing mill were as 30tonne, 80tonne, 500tonne and 600tonne. 50% of the juices were used for production of sugar and 50% resulted in molasses generation. Recovery of cane for the factory is 12%. Production department is in-charge of sugar production. The factory constitutes of one production manager. Factory runs in three shifts (8hrs/shift) in a day i.e. 4 am to 12 noon, 12 noon to 8 pm and 8 pm to 4 am. In the year 2017-18, the Factory have crushed 7.04 Lakh MT of sugarcane and produced 8.36 lakh quintals of sugar.

Sugar are filled in 50kg bags and stored in godowns' for selling. Four godowns, each with a capacity 100Mt, are available for storage of sugar.

Three distillery byproduct unit of capacity 30mt, 30mt and 40Mt were available. In these distillery units the Factory use the molasses resulted from juice for preparation of ethanol and rectified spirit. The Factory produces 1lakh liter of ethanol per day. Government has given Rs. 2crore tender for procurement of ethanol from the factory. Six people, one Chemist, one Operator and four helpers were found working in one shift at distillery unit. After crushing of the cane bagasse were left as waste product. The factory has set-up one cogeneration plant for reusing these baggasse for generation of electricity. The capacity of cogeneration plant is 22MW. The electricity generated in the cogeneration plant for indigenous purpose and also sell to the Government.

One CNG plant has been set up in the premises of Kisanveer Sugar Factory. It produces 300CCm CNG per day. Liquid waste materials were released from the distillery unit for production of CNG. CNG is supplied to Asian Paint Company. CNG plant runs for eight months in a year or as per availability of the raw material. The Factory is selling CNG @ Rs.38/-Kg and 3lakh per day turnover. Sulphur is also sold to farmer for using in the cane field. Twenty to Twenty-five employees worked in this CNG plant.

One bio-compost unit is also there. The Factory is using the solid waste material for preparation of bio-compost. Bio-compost is highly demanding in this area for cane growing. Besides the above main crushing units and byplants, the Factory have set up one packaged drinking water unit as business diversification. It produced 2000bottles per hour. Average production of 10000-15000 bottles is produced per day. The Factory is producing 500ml, 1ltr, 10ltr and 20ltr bottles. Ground water is used for this purpose.

Four big ponds are available in the factory premises for storing water. These ponds are supplying water to the factory. Sometimes the Factory also brings water via canal from the nearby dam to meet their requirement. But the Factory adapted the water harvesting technology for efficient use of use of water. Sprinkle and drip irrigation helps in reduction of water wastage.

More than 50% of value addition is made to the raw material. These are physical capital available with the Kisanveer Sugar Factory. Efficient uses of these physical capitals make them successful.

6.1.2 Human Capital

The success of every organization lies with the hands of Human Capital. Good human resources give the best results to its organization. Skilled and technically qualified human capitals do works more efficiently and effectively. The factory add value to the organization. Total staff position is 1200. It includes the workers also. Out of which 400 are permanent staff. Rests 800 are seasonal, semi seasonal and daily wages workers. Permanent staffs were less as compared to seasonal and daily wages workers. As sugar factory is labour intensive unit, it requires more manpower as compared to other factories. Daily wages workers were getting Rs.12, 000/- per month. Seasonal workers were getting 35% retention allowances. Cane harvesting workers were mostly temporary. Contractual workers are also working in the factory. Permanent staffs are skilled worker and were mostly degree or diploma holder in respective field. Contractual and temporary workers are semi-skilled and un-skilled workers. Sufficient staff and workers are working in the factory. Factory running 24hrs in three shifts in a day i.e. 4 am to 12 noon, 12 noon to 8 pm and 8 pm to 4 am.

6.1.3 Organizational Capital

Organization structure is the basic framework of every organization. Organizational structure helps in setting the vision and mission of the organization. It helps in decision making process to successfully achieve the vision in certain duration of time. A good and structured organization always achieves the target within very short span of time.

The Kisanveer Sugar Factory is headed by Chariman Sri Madan P. Bhosle and M.D. Sri Ashok B. Jadhav. On the basis of function various departments are functioning in Kisanveer Sugar Factory. These are as follows:-

- Administrative Department.
- Human Resources Department.
- Production Department.
- Purchases Department.
- Stores Department.
- Agricultures Department.
- Finance Department.
- Sales Department.
- Environment Department.

Every department is headed by one Manager or In-charge of that department. He must be specialized in

that field. The role and responsibility of each and every department is different from others. The head of the department is having overall in-charge of that particular department. The Head of Admin will look after overall administrative work of the factory. HR manager will look after manpower planning, training and education to the employees. As Kisanveer Sugar Factory is cooperative unit. The members are the owner of that factory. There are 52000 members in that factory. It is covering six tehsils of Satara district. The Factory has one elected board. It consists of 25 board of directors. Leadership quality of Chairman and other board of directors make the sugar factory a successful one and it is known as Kisanveer Group. It has also taken over one loss making cooperative sugar factory.

6.2 Intangible Resources

Technical Skills: All the staff in the sugar factory was well equipped with the technical skills in the section of Machine handling. Proper training is also given to the workers regarding the handling of the machines.

Managerial skills: All members of the sugar cooperative have belongingness to the factory. The managers in every section had managerial skills to manage the workers and staffs to run the factory.

Organizational Learning: In the factory, there is ambulance, availability of clean drinking water, rest room for workers and clean canteen. This reflects that the organizational learning in the factory was management driven and human resources were treated properly.

The problem of the factory in intangible resources is that 60% workers were part time, contractual or seasonal workers. It has been observed that such workers were not much motivated.

7. Social Capital Theory

Kisanveer Sugar Factory, is practicing the cooperative model as an association of people to achieve their common needs and aspiration with democratic control. In order to pretest the sugar factory practices as a model of cooperative we have analyzed its working and practices by comparing the seven principles of Cooperative given by International Cooperative Alliance (ICA-1995).

7.1 Network with Members

52000 sugar farmers are the members of this sugar factory. The factory emphasizes on wealth maximization rather than profit maximization. It has managed to build good relations with the members using modern technology. The farmers are linked to the factory through mobile app. This cooperative sugar factory provides agriculture inputs like pesticides, fertilizer and seeds at subsidized rate to the farmers. Farmers produce sugar cane and harvesting is done by the sugar factory.

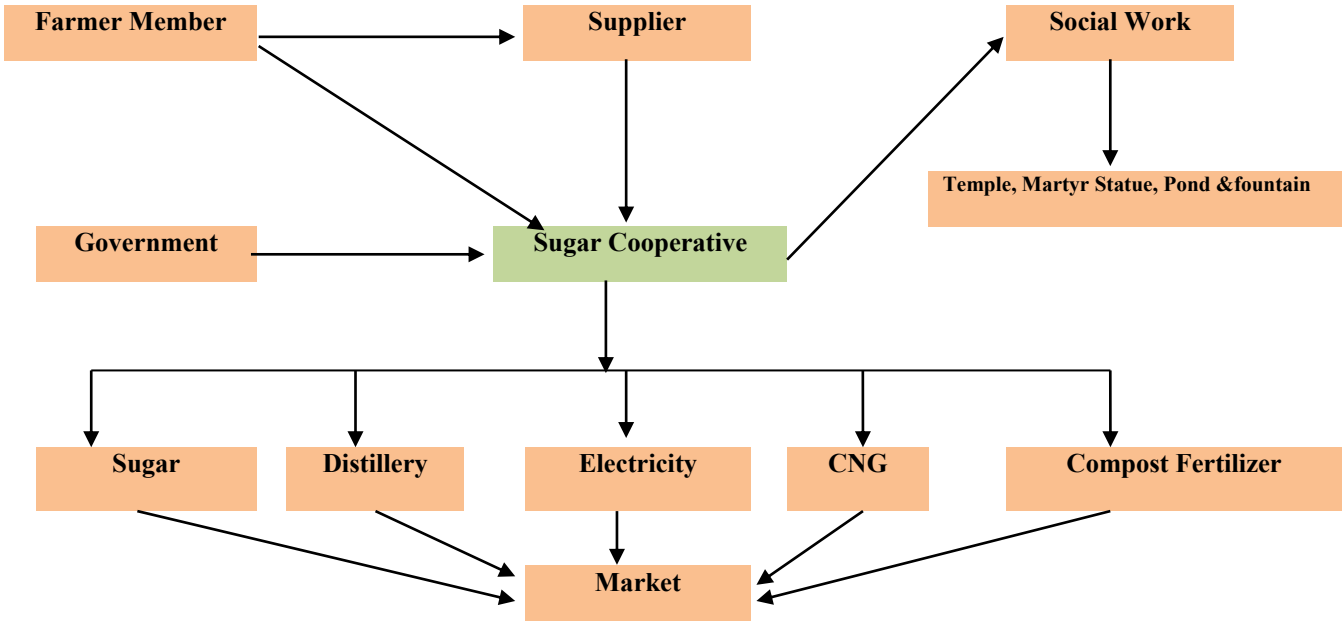

Figure 2. Network of association of Kisan Veer sugar cooperative factory.

7.2 Supplier

Sugar Cane is also supplied by factory members. All the supplier of sugar cane is members of this cooperative sugar factory. So, suppliers are the owners of the sugar factory and are paid remunerative prices for their product. The seeds, fertilizer, technology and training are given by the sugar factory and the supplier work is only to produce sugarcane.

7.3 Government

Since, cooperatives are members driven autonomous organizations. Sugar Cooperative Societies are formed by farmers who have low capital and technology driven. There should be promotional role of government in the sugar cooperatives. On the one side government is guardian of sugar cooperative societies and on the other hand it is a buyer of factory. Government buys Ethanol which is byproduct of factory for blending it with petrol and diesel.

7.4 Society

This sugar mill is contributing to some social work. It has made Martyr statue, one temple to worship and one pond with water fountain.

7.5 Market

The price of the sugar is determined by the government. Government buys the byproduct like ethanol, a raw material for petrol and diesel. Factory announces auction for traders and highest auction traders buy the sugar. The surplus electricity is sold to the government. The CNG and compost fertilizer is sold to various parties and farmers.

7.6 Diversification of Business

There is network association of mill with various diversified product. The mill is practicing 2 types of diversification strategy.

7.6.1 Concentric Diversification

Adding a new but related products or services is called concentric diversification. The mill is concentric diversification its business. It identified its core business and the related supplementary/complimentary business area which is helping to enhance its profit.

7.6.2 Conglomerate Diversification

Conglomerate diversification is growth strategy that involves adding products or services which are different from the company's present products or services. It is a totally unrelated product or service diversification. Factory is producing process drinking water as a value creation.

7.7 Trust

Industrial relations:

Industrial relations mean the relationship between (i) employer-employer relation, (ii) employee – employee relations, and (iii) Employer-Employee relations. There should be harmonious relationship among these groups for industry growth.

There is cooperation among the workers, boards of directors, members and other cooperative. There is not any workers union in this mill because the mill has given share capital to all workers. So, workers and employees are owner of this mill.

7.8 Social Norms

Sugar factory is cooperative sugar factory and all employees are share member of factory. So, there is no need to open trade union. This factory is paying above the minimum wages rate to it's workers. Employee can obtain medical treatment in ESIC hospital or ESIC empanelled hospital referred by ESIC hospital. Sugar factory have provisions for working hours of adults, employment of young persons, leaves, overtime, etc. The factory is properly maintained and well equipped with first aid box or cupboard with prescribed contents. There are arrangements for sufficient and pure drinking water for the workers. There are toilets at convenient place. According to this law there should be proper fencing of machinery. And that any moving part of the machinery or machinery that is dangerous in kind should be properly fenced. But, during our observation we found that there is lack of proper fence to dangerous kind of machine.

There is no single child working in the factory. The Constitution of India incorporates provisions to secure labour protection to children. It expressly prohibits the employment of a child below the age of 14 years in work in any factory or mine or engagement in any other hazardous employment. The policy of the Government is to ban the employment of children below the age of 14 years in factories, mines and hazardous employments and to regulate the working condition of children in other industries.

7.9 Participation

Employee participation in decision making process makes ownership in decision, which ultimately gives better

result. When employees are highly engaged it can foster employee's positive attitude, productivity and overall wellbeing of the individual and company.The forcefully imposed duties and responsibility decreased the morale and motivation of the employee. The employees are given share of the company. The Factory can take participation in AGM.

8. Performance of Sugar Cooperative

This section explores the four indicators namely financial, internal business process, customer, learning and innovation of the sugar cooperative factory.

8.1 Financial

The crushing capacity of sugar mill is 4000 TCD. The mill is successfully operating since 1969. The mill has attached Distillery unit with an installed capacity of 60 KLPD in Phase I which would be expanded to 100 KLPD in Phase II. KSSSKL has established 22 MW capacity bagasse based cogeneration power project (Co-gen Project) in sugar plant premises. Table 1 shows a comparison of the balance sheet of the two consecutive years. The (Table 1)shows the financial performance in terms of liability.

Table 1. Balance sheet of sugar cooperative of two consecutive years

Liabilities	2016-17	2017-18
Share Capital	924,904,148.63	923,076,197.63
Reserve & Other Funds	2,303,249,337.95	2,430,474,485.95
Secured loan	3,062,143,084.60	2,502,369,856.21
Unsecured Loan	…	…
Deposits	41,102,198.00	41,102,198.00
Current Liabilities & Provisions	3,074,332,352.35	4,165,342,687.03
Interest Payable	172,932,211.67	141,431,039.67
Other Paybles	272.131.74	272,131.74
TOTAL	9,578,663,333.20	10,209,068,596.23

The (Table 2) below depicts that cane purchase has reduced from 2017 to 2018. The overall profit is more in the present year as compared to the previous year.

Table 2. Profit and loss account of sugar cooperative of two consecutive years

Particulars	2016-17 (Rs. Ps.)	2017-18 (Rs. Ps.)
Cane Purchase	1,806,595,524.00	1,579,301,754.00
Cane Purchase Tax	66,211,473.00	2,322,771.00
Cane Supply Rebate Expences	14,595,014.02	400,316.00
Cane H & T Expenses	415,066,936.29	349,196,329.78
Salary & Wages	257,867,350.80	257,701,862.00
Stores & Spares	265,721,129.40	358,575,737.56
Prod. & Sales Expense	237,130,496.90	176,570,230.00
Admin Expenses	89,531,272.52	73,283,553.42
Interest Expenses	429,206,144.33	330,307,721.91
Depresiation on Prod. & Non Prod	86,473,874.00	84,348,066.00
Provision	2,500,000.00	2,500,000.00
P&L Trf to Balance Sheet		98,180,728.83
TOTAL	3,152,719,196.93	3,312,689,070.50

The (Table 3) depicts that the financial performance has increased in case of sugar cooperative factory from the last two consecutive year.

Table 3. Sales account of sugar cooperative of two consecutive years

Particulars	2016-17 (Rs. Ps.)	2017-18 (Rs. Ps.)
Net Sugar Sales	2,292,163,229.02	2,533,060,270.53
By-Product Income	473,382,617.85	467,409,961.56
Other Income	32,856,813.65	83,973,661.36
Distillary Profit	7,255,083.57	83,541,832.62
Disel Pump Profit	2,633,921.62	2,666,143.40
Co-Gen Profit	170,034,203.62	139,906,351.20
CD Dept Profit	8,266,391.37	2,130,849.99
Loss Transfer to Balance Sheet	686,306,984.86	…

8.2 Internal Business Process

The factory has been honored by VSI as a Best Distillery in Co-operative Sugar and since 1970 we have taken consecutive seasons successfully. It is reflected to make

it financially sound and viable. In January 2003 Hon'ble Madandada Bhosale and his co-worker has taken charge and since then, to make an excellent track record of organization, the management of the factory has, in specific, centered its attention on innovative practices by introduction of update technology to improve technical efficiency of sugar plant and machinery with considerable minimum investment of funds, application of modern technology, and by introduction of high sugar varieties of cane and improved agricultural methods.

The factory has Green Houses, Amarvan (Mango Plantation), Ultra High Density Plantation Amalavan (Aonla), Sitaphal Plantation (Custard apple), Jamun plantation, Bamboo plantation, Nakshatra van, Guava Plantation, Vermi compost, Soil water testing Laboratory, Seed Programme, Irrigation Potential, Tissue Culture Seed Nursery Programme and Bio-Culture Laboratory.

8.2.1 Computerization

ERP:

- Time Office- Automatic Attendance Machine is installed at premises. Data from attendance machines are accepted regularly and at the end of month Total Pay sheet, PF Chalan are generated on Computer. Also, this module keeps track record of Employees.
- Agriculture- Total seeds given to farmers, Cane registration are done on Computer. Computer maintains Gat, Village, Farmer, Transporter, Harvester and Mukadam Details.
- Weigh Bridge- Total cane receipt at Weighbridge is done on computer and respective token nos. is allocated.
- Cane Accounting- Data from Weighbridge/Cane yard is utilized and farmer bills are generated considering commission and deduction.
- Finance Accounting/Society Accounting- All financial transactions are maintained on computer and trial balance is generated for respective financial year.
- Share Accounting- All share holders, their Receipt and Return amounts are maintained on computer. Trial balance and utility reports are generated.
- Store Management System/ Store Accounting- Total Inventory and related documents is maintained on computer e.g. Requisition from, Issue note generation, Purchase order generation, stock statement and valuation of Inventory.
- General Department- All general activities of administration department are maintained on computer e.g. inward and outward.
- Petrol Pump- Diesel, Petrol given to transporter is maintained on computer and amount is deducted from their bills.
- PAN Automation- Computer controls Sugar bricks by controlling Vacuum inlet valves, charging valves and Pan Level.

8.2.2 Meteorology Center

It is the 1st time in the history of sugar factory that Meteorology Center is erected in factory area. It started working from **1st July 2008**, and is located in area of 4 guntha near guest house. For its installation we got technical guidance from Irrigation Department of Maharashtra Govt.

This center is very useful the farmers in the working area of Kisanveer Sugar factory. Farmers getting information about changing climate, rainfall and according to this information the Factory are deciding cropping pattern in the area. Meteorology Center is helping the farmers in modernization of agriculture, increasing crop production and improving quality of produce.

Records are taken two times in a day i.e., in morning at 8.30 am and in the evening at 5.30 pm. These records are maintained properly and comparison is taken from present and past data, report is prepared and conveyed to the farmers for decision making.

The following instruments were present in the meteorology center.

- Maximum and Minimum thermometer.
- Dry Bulb and Wet Bulb thermometer.
- Thermograph.
- Hair Hygrograph.
- Ordinary Rain gauge.
- Autographic Rain gauge.
- Cup Counter Anemometer.
- Wind Vane.
- Pan Evaporimeter.
- Sun Shine Recorder.

8.2.3 Shahid Smruti Van

26/11 terrorist attacked on Mumbai, while fighting against terrorist officers from Maharashtra Police Department, National Security Department and including Soldiers from Indian Army 19 people were martyred. In which Major Sandip Unnikrishnan (national security dept.), Ashok Kamte (Police commissioner Mumbai), Hemant Karkare (head of anti-terrorist squad), Vijay Salaskar (encounter specialist) and from Mumbai Police Department Jayavant

Dudhe-Patil, Ambadas Pawar, Tukaram Ombale, Bapusaheb Dhurgude and Balwant Bhosale, these five belongs to Satara district were also present.

In the Shahid Smruti Van, 2230 flower plants were planted. This number represents the attack date 26, 11th month, 2008 year, 166 innocent people who died including 19 officers and soldiers. A sculpture showing faces of four main police officers in front & five belongs to Satara at rear side. And this is placed at the centre of Map of Maharashtra state constructed on ground. ***'Bakul'*** (varigated kamini) scented flower plants were planted in the memory of officers and soldiers. Here 'AmertiaNobileas' a rare flower plant which is known as ***'Tree of Heaven'*** *is also planted*. This Shahid Smarak is devoted to people on 17th May 2010 in presence of martyrs family members, retired high court judge P. B. Sawant, & special Govt. advocate Ujjwal Nikam.

8.2.4 Quality/ISO

In May 2010 our Sugar factory certified by ISO 9001-2008 certificate. All the procedures in factory are followed according to the ISO norms.

8.2.5 Community Radio Station

The main objective behind CRS is to convey the information regarding farming; modern techniques developed in agriculture, government policies etc. to farming community.

8.2.6 Packaged Drinking Water Plant

In nearby time we are going to launch our packaged drinking water in market. The plant set up is done & in few days production will start. Factory is going to launch 'Bhalary' and Kiveej aqua as a brand in the market.

8.2.7 Distillery Division

The Kisanveer Karkhana had erected 30 KLPD Distillery Plant in the year 1994 and in 20 KLPD Extra Neutral Alcohol Plant in the year 1995.

Existing management has achieved the landmark production of 91, 21,000 liters in the year 2006-07. After that existing management had decided to expand the existing Distillery Capacity from 30 KLPD to 60 KLPD with new multi pressure distillation technology and the production with expanded capacity was started from April 2009, With that the new 20 KLPD Ethanol Plant was erected in Month of January 2011 and the production of ethanol (Anhydrous Alcohol) was started in the Month of February 2011. Besides that management has decided to further expand the distillery Capacity from 60 KLPD to 100 KLPD Rectified Spirit Plant.

8.3 Leaning and Innovation

Sugar Factory is not able to survive only by production of sugar since the market price of sugar is very low.

For production of 1 ton sugar cost price is Rs. 4100 while the selling cost of 1 ton sugar is Rs. 3100. So, production of sugar has always been a risky situation. To overcome the risk ad loss, the Kisanveer Sugar Factory has undergone several learning and innovation practices. The innovative practices are mentioned below:

- Distillery production: The factory produces more than 120000 liters of ethanol per day from 3 various plants. The Factory produce ethanol from molasses produced as a byproduct from sugarcane. Only 50% of sugarcane juice is used to make sugar and remaining 50% of the sugarcane juices is used for ethanol production. Ethanol is used for preparation of spirit and also in petrochemical.
- Electricity Production: Kisanveer sugar factory produces electricity from bagasse generated as a byproduct from sugar production. The Factory produce 23 MW electricity and sell it to national electricity board. The Factory earn regular money from it and also uses the energy for the factory in nominal rates.
- Drinking water factory: One of the new innovative idea of Kisan Veer sugar factory is drinking water. The Factory produces 13000 liters of drinking water per hour.
- CNG Plant: The Factory produce CNG gas from the press mud generated as a byproduct from sugar production.
- Compost fertilizer: After producing CNG gas remaining sulphur and other chemical compounds is used as Compost fertilizer. The compost fertilizers, good for soil are provided to the farmers at nominal rates.
- Kisan Bricks: Another unique innovation of this factory is production of bricks.

8.4 Customer

Kisanveer Sugar factory sells sugar as per the government rates. Proper tender is issued for selling the byproducts and sugar.

The Factory provides sugar to their farmer members in nominal rate according to their share in the factory.

The Factory provides maximum 70 kg sugar per annum on rate of Rs 10 per kg.

The Factory provide good rate of sugarcane for farmers and also provide bonus for share holders (Kumari, 2017; Kumari et al., 2016). The factory used waste material properly and produces many new items (Kasat et al., 2017; Kumari and Patil, 2017). Distillery Plants, CNG Plants, Water Plants, Compost fertilizer, Electricity and Bricks are the major innovation of Kisanveer Sugar Factory. The factory also contribute for society like Temple, Sahid Jawan park, Green house, strawberry plantation, drip irrigation and so on.

9. Conclusion and Future Research Direction

The study has elaborated the extensive role of resource based theory and social capital theory on organizational performance. It is therefore required from this study that human resources must be properly trained and managed in order to undergo development. Sustainability in any spectra comprises of meeting the social, economic and environmental objectives (Kumari et al; 2017a, Kumari et al; 2017b and Kumari et al; 2017c). It is through this human capital that we are able to meet our objectives. The study is limited to a case of sugar cooperative factory. However, we feel that the study can be extended further to recognize the human capital in achieving sustainability in sugar cooperatives.

9.1 Suggestions for Better Performance of Sugar Cooperative

Kisanveer Sugar Cooperative is doing a diversified activity and excelling in the activities. It has been suggested that the factory can also contribute to the education sector for a sustainable development. The study has suggested that the workers in the factory are contractual and seasonal. The health and safety measures found in the industry were not satisfactory. Many workers were not taking safety measures like use of helmets, gloves and proper care were neglected in the industry. It has been suggested that health and safety measures should be properly taken for a proper human resource management in the industry.

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Annexure 1: Questionnaire

1. Name of Industry _____ Location _____
   Age of Industry _____ Age of owner _____
2. Nature of Industry and capital investment made
   Manufacturing ☐ < 25L ☐ 25L-1 Crore
   ☐ 1 Crore -5 Crore ☐ > 5 Crore
   Information Technology E-commerce Business Process Outsourcing
   ☐ < 10L ☐ 10L to 1 Cr ☐ 1-2 Crore ☐ >2 Crore
3. Employee Demography :
   Count of permanent workers
   ☐ 10-20 ☐ 21-40 ☐ 41-60 ☐ >60
   Average Age Workers
   ☐ 18-25 ☐ 25-30 ☐ 30-35 ☐ >35
   Educational Qual
   ☐ <10 th ☐ 10/12th Diploma Graduate PG
   Any Contract workers
   ☐ 10-20 ☐ 21-40 ☐ 41-60 ☐ >60
   Count of Supervisors
   ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ >15
   Average Age Supervisor
   ☐ 20-25 ☐ 25-30 ☐ 30-35 ☐ >35
   Educational Qual 10/12th pass Diploma Graduate PG
   Count of Managers
   ☐ 1-3 ☐ 4-6 ☐ 7-9 ☐ >10
   Average Age Manager
   ☐ 25-30 ☐ 30-35 ☐ 35-40
   ☐ 40-45 ☐ >45
   Educational Qual 10/12th pass ☐
   Diploma ☐
   Graduate ☐
   PG ☐
   Type of Business Proprietorship ☐
   Partnership ☐
   Private Limited ☐
   Average Age of head
   ☐ 25-30 ☐ 30-35 ☐ 35-40
   ☐ 40-45 ☐ >45
   Educational Qual 10/12th pass ☐
   Diploma ☐
   Graduate ☐
   PG ☐

4. Functions/Departments in the firm
   Production ☐
   Finance ☐
   Administration ☐
   H R ☐
   Procurement Sales ☐
   Marketing Others ☐
5. What are top 3 challenges in front of you?
   ☐ Skilled workforce Managerial
   ☐ Talent Financial Resource
   ☐ Procurement of raw material
   ☐ Access to technology
   ☐ Labour Laws and Processes
   ☐ Access to land/electricity/water
   ☐ Any other challenge _____
6. What is your assessment of business environment that you operate in?
   ☐ Complex-difficult to manage
   ☐ Complex- manageable ☐ Not complex
7. How would you club your workers basis skill? (in %) ____ High ____ Moderate ____ Less
8. Overall are you cash positive ☐ Yes ☐ No
9. Annually – are you profitable? ☐ >30% ☐ 10-20%
   ☐ <10% Less ☐ Yet to make

Value Addition

10. Do you have a vision? ☐ Yes – Documented
    ☐ Yes – known to few employees ☐ No
11. Nature of your products / services ☐ Cost effective
    ☐ Differentiator
12. How much value do you add to the raw material
    ☐ >50% ☐ 25-50% ☐ <25%
13. Are your products or services exported to other countries?
    ☐ Yes ☐ No
14. Do you send employees as expatriates or deputation to other countries ☐ Yes ☐ No

Resource Richness

15. How is your Industry structured and how does structure help meet business objective?
    ☐ No Hierarchy Owner+First
    ☐ Level Supervisor/Manager
16. How are your managerial process driven?
    ☐ Owner Driven ☐ Owner+Supervisor/Manager Driven
17. How long has your Supervisor/Manager level been with you?
    ☐ Promoted from within New Professional ☐ Family
18. What % of your total expenses goes towards managing employee related expenses (salary etc)?
    ☐ <10% ☐ 11-20% ☐ 21-30% ☐ 31-40% ☐ >40%

Existence of HR Champion

19. Are your employees a critical asset to your Industry Yes No
20. Why do you say so?
    ☐ Good Machines ☐ Skilled Workforce
    ☐ Unskilled Workforce
21. Who solves above complex HR issues?
    ☐ Family ☐ Professional ☐ Self Other?
22. Does the above person need further training on how to solve HR issues? ☐ Yes ☐ No
23. What are the Social Norms in your industry
24. Type of Network built
    .....
    .....
    .....
    .....
25. Social Participation in the Industry
26. Social Contribution .....
    .....
    .....
    .....
    .....
    .....
27. Description of the Annual report to be attached..... .....
    ....
    ....
    ....
    ....
    ....
28. Types of Byproduct Plant .....
    .....
29. Description of By product Plant
30. financial and Sale Accounts……